

Intellectual capital management, a paradigm to enhance the human resource management in knowledge-based economy

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Abstract: Labor force which is qualified, innovative, dynamic and knowledgeable is the most important competitive advantage in organizations and rarest resource in today's knowledge-based economy. Offering different and distinct qualified products and services, reducing the costs, increasing the productivity, creativity and competitiveness are some advantages of qualified and knowledgeable human resources. Therefore, undoubtedly, the present era is the era of organizations, and trustees of these organizations are the human beings. Intellectual capital is raised as one of the most valuable resource in companies, and a key capital in the growth of entrepreneurship. Hence, today the necessity for development and development management is considered as a serious requirement in vast national level and the entrepreneurship area, and moving towards a knowledge-based economy has led to a change in the dominant paradigm in industrial economy. So that today we can see the emerging of knowledge-based and information-based economy whose foundation is based on intellectual capital. In the knowledge-based economy, intellectual capital is used to create value for the organization. In today's world, the success of any organization depends upon the ability to manage these assets. Today, we can see the growing importance of intellectual capital as an effective tool for increasing companies' competitiveness. Even intellectual capital measurement is necessary to compare different companies to determine their true value or improving their controls. This paper attempts to address intellectual capital, intellectual capital management objectives, measurable goals of intellectual capital, elements of intellectual capital, methods of measurement in organizations, interactions between organizations, quality management, human resources and quality, status, importance and necessity of capital management and human resource development, and through this study the place, importance and necessity of capital management and human resource development, new roles and functions of human resource management in the knowledge economy in the 21st century. The results suggest that in the present age, the availability of knowledgeable human resources are considered as the most important capability of the organization in acquiring competitive advantage, and also the main intangible asset, and the organizations believe that the employee must be regarded as the basis for improving quality and productivity in all organizational processes. Leading organizations by their efforts to attract, develop, retain and employ qualified and knowledgeable personnel ensure the competitive advantage for today and tomorrow. [Ali Atashi, Hossein Kharabi. **Intellectual capital management, a paradigm to enhance the human resource management in knowledge-based economy.** *Life Sci J* 2012;9(4):1336-1340] (ISSN:1097-8135). <http://www.lifesciencesite.com>. 202

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1. Introduction

Human resource development is such as a coin with two sides. It means that as it emphasizes on strengthening human capabilities through investment, it also highlights the effective use of human capabilities in creating a cooperative framework for improving income and employment. In fact, the human resource development is a continuous series of formal and informal activities which by making change in paradigms and subjective patterns and improving self-consciousness in persons and promoting their capabilities and leading them to self-actualization, increases productivity, and maintain and improve an organization's competitive advantage. Research in the field of human resources, labor

organizations seeking to increase their knowledge base progress of their human forces, and participation and consultation of their human forces in organizational affairs, enjoy much more synergy compared to static and traditional organizations which keep the channels between individuals closed, and make limitation for the information processes between their employees.

Nonetheless, by the scientific and technological advances, gradually the economic activities of communities become more 'knowledge intensive' and knowledge-based economy is formed. One characteristic of the knowledge economics is expanded workforce that will deal with scientific instruments. This expansion of the work force is both

quantitative, that means the number of knowledge workers is increased, and qualitative which means the quality of the workforces is promoted. Knowledgeable workforce which is now the main body of human capital and intellectual capital in economic systems is now regarded as the most essential capital in the societies. The experiments in knowledge-based economies show that the intellectual capital significantly exceeds the financial and physical capitals. And in these societies, knowledge, science, and knowledge creation is the main factor in survival and development of organizations in competitive circumstances.

Today, the words related to human resources in knowledge-based economy has differed, and in many of the scientific literature, the terms mental capital and mental power are used rather than labor force. According to the 1994 Human Development Report, United Nations Development Programme (UNDP), any action that strengthens the worldwide movement for development of human resource development, particularly in developed countries and developing countries is a human effort that is worthy. The concept of intellectual capital has always been ambiguous. Therefore, researchers have attempted to define and measure the category that has not ever been measured. Different definitions of intellectual capital are presented in different sources:

The term "intellectual capital" was introduced for the first time by John Kenneth Galbraith in 1969. Before that, Peter Drucker called "knowledge workers" to be used. In a simple definition, intellectual capital is the difference between market value and book value of a company's assets. According to this definition, intellectual capital is the processes and assets which are usually not reflected in the balance sheet.

2. The history of human resource management

If we study the history of human resource management, we will see the field has had many ups and downs in today's world. This field has found its place difficultly, and today it is to find the real position. But the general trend in human resource management is ? with development in management schools. As schools of management developed, human resource management has also been developed. Human resource management is primarily rooted in the neoclassical school. The school leaders, also known as behaviorism, are people like Maslow, Mayo, Owen, Burg, and more. Neoclassicals revised the classical concepts, and put the human rather than the technical aspects, as the dominant organizational aspect, and used the term Social & Technical which has both the technical aspects and the human dimension. Shortly, the history of development of

human resource management is divided into six periods.

1. age of welfare

In this period (1910-1915), the traditional approach to human resource development, was in the least important place. A unit which called welfare unit was in the organizations that only dealt with staff affairs. In this period, the human resource unit was expected to deal with the staff affairs, simple and public affairs activities that were in connection with the employee.

2. Age of supervision on staff

The period between first and second world wars, which is roughly correspond to the neoclassical school, in which the employee in their organizations are considered as an important issue to be paid attention to. The staff was not previously considered as a separate category. Issues such as insurance and retirement were introduced in this period. And issues related to the recruitment and retention of documents and records are related to that period.

3. Personnel management age

In this period (1940-1960), the concept of management went beyond the supervision. It means for human force, planning, evaluating, organizing and so on are performed. In this period, in addition to the previous duties of employees' evaluation, payment of salary and incentive plans in payments system was also added to the human resource management function.

4. Advanced management age

In this period (1960-1980), in addition to the previous tasks, dealing with affairs such as employee disciplinary matters, manpower planning, recruitment and human resources were included in the tasks of human resource management.

5. Entrepreneur age

In this period (1980-1990), in general, a person is said to be entrepreneur who recognizes the opportunities and uses them in appropriate situations (Drucker, 2001). In this period, in addition to the previous tasks of human resource management, it was expected to identify, recruit, and train entrepreneurs, since the organizations owe their life to them because of their creativeness and innovativeness. It is said that in this period human resource management field has been a challenge issue. It means that if organizations are dealing with this scope well, good opportunities will be made, but if they have not appropriate interaction, it would be considered as a threat to them. In this period, in addition to the previous tasks, human resource management is involved with organizational strategies and tactics.

6. Meta entrepreneurship age

In this period, no the strategy can not be compiled unless the human resource management unit confirms it, because the key factor of success for organizations is the human factor. In this period, human resource managers reach to the position of strategic partners to the organization. According to this, the second salary after the chief executive officer is paid to human resource manager. So the subject of "Human Resource Accounting" is discussed.

3. Importance and necessity of developing human resources

The results of numerous studies on the role and importance of human resources in development of organizations and sometimes growth of societies insisted that any society is not developed, unless it deals with human resource development. The developed countries have developed organizations, and developed organizations have developed managers, and developed managers develop human resource of organizations. However, today, qualified and skilled manpower are considered as a valuable factor and endless resource for development of organizations and countries. So that during the last half century, a considerable part of the developed countries owe to the change in their skilled manpower. If in the past, labor, capital and land were considered the main factors of production, today, applying technology, human factors and increased productivity are considered as development factors.

Valuable experiences of leading successful organizations on human values indicate the importance of human capital employed in organizations. At present, in all developed countries, the human force that has progressive features, ensures the organization's survival. If we want the effectiveness, expansion, permanentness, and survival, this unwritten rule should be written and applied by managers and company officials.

They know the magnitude of their organization as those who work for them, the core of their business development is based on their staff, they know humans as the sources of creativity, innovation, power and beauty, and believe if the conditions for people working in their organization are provided, their abilities would be manifested. They believe that success or failure of any organization or institution is based on the loyalty and competence of its personnel. And finally think that if the organization does not deserve to keep its loyal and technical forces, or does not choose appropriate personnel to maintain their highest values, it will gently decline. Therefore, if an organization wants sustainable growth, survival and effectiveness in today's competitive arena, it should deals with development and optimization of its human resources in knowledge-based economy.

4. Knowledge-based economics

Knowledge economics or knowledge based economics includes all **jobs, industries, and companies in which knowledge and capabilities of people** are crucial in competitive advantage, rather than machines and technology capabilities. It is anticipated that from 19/5 million jobs that is to be created between 1998 and 2008 in the U.S., 19 million is in the service sector. although the number of knowledge-based works in the service sector is higher, with the arrival of computers and microprocessor, manufacturing sector is more than ever dependent on the knowledge and human capabilities. Knowledge economy is the result of commercialization of information and communication technologies.

5. Development of human resource management in the knowledge-based economy

Knowledge-based economy has less reliance on physical accumulation of manpower, raw materials and money. In the past, integration of these resources was necessary to produce goods and services. Now, by what is called "demassification", we can achieve to the same functionality. Labor, materials and money can be combined while being throughout the world.

Scott (1996) believes that Human resource management in general and human resource professionals, in particular, should have unique conditions and characteristics to be able to lead the process of change in organizations. However, at present, human resource management is very slow in providing appropriate responses to environmental changes. The main problem is that human resource professionals have already done just tasks such as recruitment, compensation and so on. This might have affected in the time of stability of lack of change, but with the arrival of the digital economy, human resource professionals need to revive and strengthen partnerships with other factors in order to make the company change.

But how can human resource management consistent with the knowledge economy, and enhance the skills and capabilities of human resources?

Ulrich (1999) raises three key questions to address this question:

- 1) What is the work of human resource management?
- 2) Who will do work of human resource management?
- 3) How the technology will affect human resource management?

In response to the first question it must be said that the knowledge economy, human resource management work is not restricted to traditional tasks of recruitment, training and development,

performance management and so on. In the knowledge-based economy, human resource management functions include those activities that are involved in traditional business functions (such as marketing and finance) and also nontraditional activities (such as knowledge management). Therefore, human resource management does not focus only on "people management". Human resource management is now responsible for the management and development capabilities and abilities that people have created and for managing relationships that individuals should develop.

In answer to the second question it must be said that many human resource professionals are still engaged in traditional activities of human resources, although some of these things are now left to the agents out of the organization (such as staffing), and or are done in digital form (including electronic human resources). In addition, most traditional works of human resource management are now carried out by frontline managers and specialists in other areas (such as IT) or other parts of the organization. In the knowledge-based economy, by development of human resources management, the responsibility of human resources should be shared among human resources managers, employees and individuals outside of the organization.

And finally, "In answer to the third question, it should be noted that increasing and improving administrative efficiency, the technology allows human resource managers to use fewer personnel and play more valuable roles in the organization. The rapid development of e-service systems of human resources has caused to the fact that more information and in a more appropriate form be provided to employees and managers, in order to be used for human resources of the organization.

New systems of human resource management in the knowledge economy of the 21st century, by providing content based on the knowledge that is interpreted and explained on the basis of employee's role in the organization, has made the employees to perform their duties properly and develop their abilities and capabilities.

6. Concept and definition of intellectual capital

Stewart believes that intellectual property is a collection of knowledge, information, intellectual property, experience, competition, and organizational learning, which can be used in order to create wealth. In fact, intellectual capital includes the entire staff, organizational knowledge and the ability to create value, and the leads to consistently competition. "Bentis" defines intellectual capital as a set of intangible assets (resources, capabilities, competition) obtained from organizational performance and value creation.

Edvinson and Malven define intellectual capital as "Knowledge and information applied to work to create value".

Bentis and Holland in their article in 2002 define intellectual capital as follows: intellectual capital indicates a reservoir of knowledge which exists in a specific part of an organization. In this definition the relation between intellectual capital and organizational learning is focused.

As a general definition, intellectual capital can be defined as: "Intellectual capital" indicates all intangible assets that are not physical and objective in nature, and determine the difference between market value and book value of their firms, they are Knowledge-based, are owned by their companies, are not regarded in the traditional balance sheet as an asset and can lead to value creation in organizations. All these features make the value obtained because of a purely local phenomenon and can not be bought and sold.

7. Goals of Intellectual Capital management

Measurement and management of intellectual capital is an effective tool for increasing competitiveness; understanding and managing these hidden assets have strategic role in the organization's global strategy. Intellectual capital index allows managers to have an understanding of the impact of intellectual capital on a real strategy. Goal of intellectual capital management is to encourage, innovate, self-motivate, initiative, utilize and build knowledge-based organizations. intellectual capital management has a pivotal role in the in remaining competitive in today's market which is rapidly changing and unpredictable. Objectives of intellectual capital management are:

Develop a comprehensive strategy for trading intellectual capital;

Development and implementation of intellectual capital for key projects;

Acquisition the value of the triple markets;

Intellectual Capital Management was established as an independent business.

8. Elements of intellectual capital

In general, scholars and practitioners of intellectual capital have consensus on three elements:

1. Human capital,
2. Structural capital,
3. Relational capital.

In this part we try to have more explanation about these elements.

a. Human capital

Human capital indicates the stock of knowledge in an organization. Ross and his colleagues also argue that employees create intellectual capital through their intellectual competence and agility. Bruking believes that human assets of an

organization, includes skills, assignment, problem solving skills and leadership styles. Stuart said that if in a learning organization, employees are regarded as the most important asset, however, they are not still in possession of the organization, since they are people who have emotions and feelings. They can only be committed and loyal to the organization.

b. Structural capital

Structural capital includes organizational charts, operating instructions, processes, strategies, implementation plans. Generally, all that is valuable to an organization more than its material worth. More clear, Ross and colleagues believe that what remains in the organization after the workers go home after work is the capital of the Company. Infrastructure assets, such as technology, processes and working methods, and also includes intellectual property such as know-how, brand names and patents. Moreover, according to Stuart, capital structure is knowledge in information technology, and patent, design and trade names. If an organization has poor systems and working procedures, intellectual capital will not reach its maximum potential. However, organizations with a strong capital structure will have a supportive culture that allows people to get new jobs, get failed, and learn. Moreover, Chen and colleagues argue that capital structure can help the staff in support unit to achieve optimal mental performance and also helps the business performance. Structural capital is also a function of the human capital. Thus, structural capital and human capital interact with each other to help organizations to collaboratively shape, develop and operate assets of customers.

c. Relational capital

Stuart explains the main topic of customer capital is knowledge in marketing channels and relationships between customers. Customer capital represents the potential of an organization for its external intangible factors. Moreover, Chen and colleagues classify capital in the form of customer marketing capabilities, strong market and customer loyalty. Fornell in result of his studies found that customers' consent can maintain a business relationship, reduce the flexibility of product cost and enhance a company's reputation. These studies provide further evidence of the importance of customer capital as a key component of an organization's intellectual capital. Development of

customer capital depends on support of human capital and structural capital. In general, customer capital, which acts as a bridge and through a process of intellectual capital, is the main determining factor in converting intellectual capital into the market value, and consequently, business performance of the organization. New definitions have developed the concept of customer capital to relational capital, which includes the knowledge in all relationships that the organization have with customers, competitors, suppliers, trade associations and government.

The goals of intellectual capital measurement

By reviewing more than 700 articles on intellectual capital measurement, Maar et al. (2003) indicated that five main goal is for measuring intellectual capital, that we will refer to them in the following:

- To assist organizations in formulating their strategy;

- To evaluate the implementation of strategies;

- To help expand and diversify the company's decisions;

- Non-financial evaluation of intellectual capital can be related to the repayment plans and rewards of managers.

To create a connection with the outside shareholders who have the intellectual capital. The first three goals of these series are related to the internal decisions, and their aim is maximizing the company's operating performance, in order to make earnings through the least cost, and continuous improvement in relations with customers and suppliers, and market share. The fourth is related to creating executive incentives. And the fifth one refers to making the motivation for stakeholders outside the organization. Many studies have shown that measuring intellectual capital is necessary and beneficial both for domestic and effective governance and for successful relationships with people outside the organization. It is clear that if the primary purpose of profit-making companies is effective management of future cash flows, then final stimulus for the management of the cash flows of the intangible assets is also essential for them. Since how can you manage something that you can not measure? Therefore, the measurement intellectual capital, and in general, intangible assets is very important.